

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

1 1. (Currently Amended) A heat sink assembly comprising:  
2 [[a]] plural heat conduit conduits; and  
3 a block formed of a thermally conductive non-metallic material having a first thermal  
4 conductivity, the block having airflow channels and at least two support structures,  
5 the heat conduit conduits extending through [[a]] substantial portion of the block portions  
6 of respective support structures,  
7 [[the]] each heat conduit having a second thermal conductivity greater than the first  
8 thermal conductivity,  
9 wherein the block is divided into plural segments by the support structures containing  
10 respective heat conduits, the segments having respective heat conduction distances to enable  
11 dissipation of heat from respective heat conduits.

1 2. (Original) The heat sink assembly of claim 1, wherein the first thermal conductivity is  
2 greater than or equal to about 10.

1 3. (Original) The heat sink assembly of claim 2, wherein the first thermal conductivity is  
2 less than or equal to about 100.

1 4. (Currently Amended) The heat sink assembly of claim 1, wherein [[the]] each heat  
2 conduit is adapted to transfer heat from a heat source along its length.

1 5. – 6. (Cancelled)

1 7. (Currently Amended) The heat sink assembly of claim [[6]] 9, wherein the first and  
2 second heat conduction distances are substantially the same.

1 8. (Cancelled)

1 9. (Currently Amended) ~~The heat sink assembly of claim 8,~~ A heat sink assembly  
2 comprising:  
3 a heat conduit;  
4 a block formed of a thermally conductive non-metallic material having a first thermal  
5 conductivity,  
6 the heat conduit extending through a substantial portion of the block,  
7 the heat conduit having a second thermal conductivity greater than the first thermal  
8 conductivity,  
9 wherein the block has a first segment on one side of a portion of the heat conduit, and the  
10 block has a second segment on another side of the portion of the heat conduit,  
11 the first segment having a first heat conduction distance to dissipate heat from the heat  
12 conduit, and the second segment having a second heat conduction distance to dissipate heat from  
13 the heat conduit; and  
14 a second heat conduit extending through another substantial portion of the block,  
15 wherein the block has a third segment on one side of a portion of the second heat conduit,  
16 and the block has a fourth segment on another side of the portion of the second heat conduit,  
17 the third segment having a third heat conduction distance to dissipate heat from the  
18 second heat conduit, and the fourth segment having a fourth heat conduction distance to dissipate  
19 heat from the second heat conduit.

1 10. (Original) The heat sink assembly of claim 9, wherein each of the first, second, third, and  
2 fourth segments have airflow channels extending therethrough.

1 11. – 12. (Cancelled)

1 13. (Currently Amended) The heat sink assembly of claim 1, wherein the thermally  
2 conductive non-metallic material comprises a thermally conductive polymer.

1 14. (Currently Amended) The heat sink assembly of claim 13, wherein ~~[[the]]~~ each heat  
2 conduit comprises a heat pipe.

1 15. (Currently Amended) The heat sink assembly of claim 13, wherein ~~[[the]]~~ each heat  
2 conduit comprises a tubular structure having a bore through which fluid is adapted to flow to  
3 transfer heat.

1 16. (Cancelled)

1 17. (Currently Amended) The heat sink assembly of claim 1, wherein ~~[[the]]~~ each heat  
2 conduit has a first portion and a second portion angled with respect to the first portion, the first  
3 portion adapted to contact a surface of a heat source.

1 18. (Currently Amended) The heat sink assembly of claim 17, wherein the block has a  
2 vertical axis and a horizontal plane formed by two axes, the first portion of ~~[[the]]~~ each heat  
3 conduit extending generally along the horizontal plane, and the second portion of ~~[[the]]~~ each  
4 heat conduit extending generally along the vertical axis.

1 19. (Currently Amended) The heat sink assembly of claim 18, wherein the second portion of  
2 each heat conduit has a shape selected from the group consisting of: generally straight, generally  
3 S-shaped, and shaped as a loop.

1 20. (Cancelled)

1 21. (Currently Amended) The heat sink assembly of claim 18, wherein the block has a first  
2 side edge, the second portion of a first one of the heat conduit conduits a first heat conduction  
3 distance from the first side edge, ~~the first distance being a heat conduction distance of a first~~  
4 ~~segment of the block, the first segment of the block to dissipate heat from the heat conduit.~~

22. (Currently Amended) The heat sink assembly of 21, ~~further comprising a second heat conduit extending through another substantial portion of the block, the second heat conduit having a first portion extending generally along the horizontal axis and a second portion extending generally along the vertical axis, wherein the block having has a second side edge, the second portion of [[the]] a second one of the heat conduit conduits a second heat conduction distance from the second side edge, the second distance being a second heat conduction distance of a second segment of the block, the second segment to dissipate heat from the second heat conduit.~~

23. (Cancelled)

24. (Currently Amended) A method of dissipating heat from a component, comprising:  
providing a block formed of a thermally conductive non-metallic material having a first thermal conductivity, the block having airflow channels and at least two support columns; and  
extending [[an]] elongated heat ~~conduit~~ conduits through [[a]] respective substantial ~~portion~~ portions of respective support columns of the block, [[the]] each elongated heat conduit having a second thermal conductivity greater than the first thermal conductivity,  
wherein the block is divided into plural segments by the support columns containing respective elongated heat conduits, the segments having respective heat conduction distances to enable dissipation of heat from respective heat conduits.

25. (Currently Amended) The method of claim 24, wherein extending the elongated heat ~~conduit~~ conduits comprises extending [[a]] heat [[pipe]] pipes .

26. (Currently Amended) The method of claim 24, wherein providing the block formed of the thermally conductive non-metallic material comprises providing the block formed of a thermally conductive polymer.

27. (Cancelled)

1 28. (Currently Amended) The method of claim 24, further comprising:  
2 providing a first ~~segment~~ one of the segments of the block on one side of a ~~portion of the~~  
3 ~~elongated heat conduit~~ first one of the support columns to dissipate heat from the elongated heat  
4 conduit in the first support column; and  
5 providing a second ~~segment~~ one of the segments of the block on ~~another one~~ one side of the  
6 ~~portion of the elongated heat conduit~~ a second one of the support columns to dissipate heat from  
7 the elongated heat conduit in the second support column.

1 29. (Currently Amended) The method of claim 28, further comprising providing airflow  
2 channels through the first and second segments but not through the support columns.

1 30. (Cancelled)

1 31. (Currently Amended) A system comprising:  
2 a component; and  
3 a heat sink thermally contacted to the component,  
4 the heat sink having a block formed of a thermally conductive non-metallic material, the  
5 ~~heat sink having a first segment and a second segment~~ block having plural support structures,  
6 the heat sink further having ~~[[a]]~~ heat conduit conduits extending through the ~~block~~  
7 ~~between the first and second segments, the first~~ support structures of the block, the support  
8 structures dividing the block into plural segments, each segment having a respective heat  
9 conduction distance to enable [[to]] heat transfer heat away from [[the]] a respective heat conduit  
10 ~~in a first direction, and the second segment to transfer heat away from the heat conduit in a~~  
11 ~~second direction~~.

1 32. (Currently Amended) The system of claim 31, wherein the heat ~~conduit comprises a~~  
2 conduits comprise heat [[pipe]] pipes.

1 33. (Currently Amended) The system of claim 32, wherein the thermally conductive  
2 non-metallic material comprises thermally conductive polymer.

1 34. (Currently Amended) The system of claim 31, wherein the thermally conductive  
2 non-metallic material has a first thermal conductivity, and ~~[[the]]~~ each heat conduit has a second  
3 thermal conductivity greater than the first thermal conductivity.

1 35. (Original) The system of claim 34, wherein the first thermal conductivity is in a range  
2 between 10 and 100.

1 36. (Currently Amended) The system of claim 31, wherein the heat sink further comprises  
2 airflow channels extending through the ~~first and second~~ plural segments but not through the  
3 support structures of the block.

1 37. (Currently Amended) ~~The system of claim 31,~~ A system comprising:  
2 a component; and  
3 a heat sink thermally contacted to the component,  
4 the heat sink having a block formed of a thermally conductive non-metallic material, the  
5 heat sink having a first segment and a second segment,  
6 the heat sink further having a heat conduit extending through the block between the first  
7 and second segments, the first segment to transfer heat away from the heat conduit in a first  
8 direction, and the second segment to transfer heat away from the heat conduit in a second  
9 direction,

10 wherein the block further has a third segment and a fourth segment, the heat sink further  
11 having a second heat conduit extending between the third and fourth segments.

1 38. (Original) The system of claim 37, wherein the thermally conductive material comprises  
2 thermally conductive polymer.

1 39. (Original) The system of claim 37, wherein the heat conduits comprise heat pipes.

1 40. (Currently Amended) A heat sink assembly comprising:

2 [[a]] plural heat conduit pipes; and

3 a block formed of a thermally conductive non-metallic material having a first thermal  
4 conductivity, the block having plural support columns that divide the block into plural segments,  
5 the plural segments having airflow channels, wherein the support columns are without airflow  
6 channels,

7 the heat conduit pipes extending through ~~a substantial portion of the block~~ respective  
8 support columns,

9 [[the]] each heat conduit pipe having a second thermal conductivity greater than the first  
10 thermal conductivity,

11 ~~the block having airflow channels adjacent the heat conduit to provide surfaces in the~~  
12 ~~block exposed to airflow~~ the segments having respective heat conduction distances to enable  
13 transfer of heat away from respective heat pipes in the support columns.

1 41. – 44. (Cancelled)

1 45. (New) The heat sink assembly of claim 1, wherein the airflow channels are provided in  
2 the plural segments but not provided in the support structures of the block.

1 46. (New) The system of claim 31, wherein the block has airflow channels in the segments  
2 but not in the support structures.

1 47. (New) The heat sink assembly of claim 40, wherein the block is formed of a thermally  
2 conductive polymer.

1 48. (New) The heat sink assembly of claim 40, wherein the heat conduction distances of the  
2 segments are generally the same.